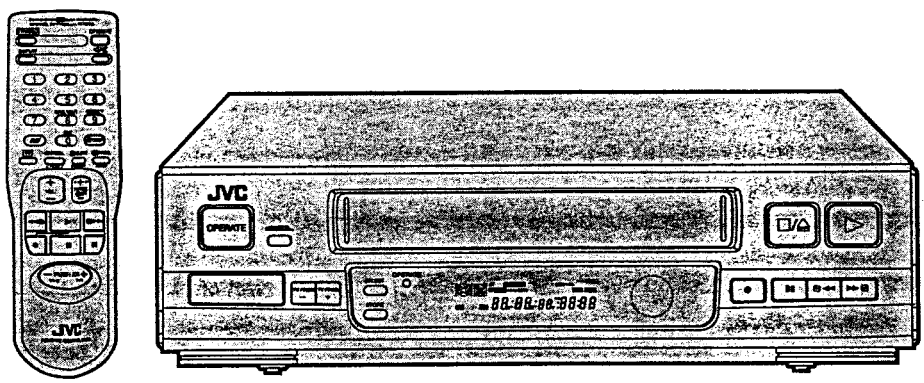
JVC

V14186

VIDEO CASSETTE RECORDER

HR-J220EA



VHS PAL

INSTRUCTIONS

PU30◎5-1714

Safety Precautions

The rating plate and the safety caution are on the rear of the unit.

WARNING: DANGEROUS VOLTAGE INSIDE
WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

The OPERATE button does not completely shut off mains power from the unit, but switches operating current on and off.

CAUTION
- When you are not using the recorder for a long period of time, it is recommended that you disconnect the power cord from the AC outlet.
- Dangerous voltage inside. Refer internal servicing to qualified service personnel. To prevent electric shock or fire hazard, remove the power cord from the AC outlet prior to connecting or disconnecting any signal lead or aerial.

IMPORTANT:
- It may be unlawful to record or play back copyrighted material without the consent of the copyright owner.
- Please read the "Precautions" section of this instruction manual before installing or operating the recorder.

VHS PAL HQ

- Only cassettes marked "VHS" can be used with this video recorder.
- HQ VHS is compatible with existing VHS equipment.

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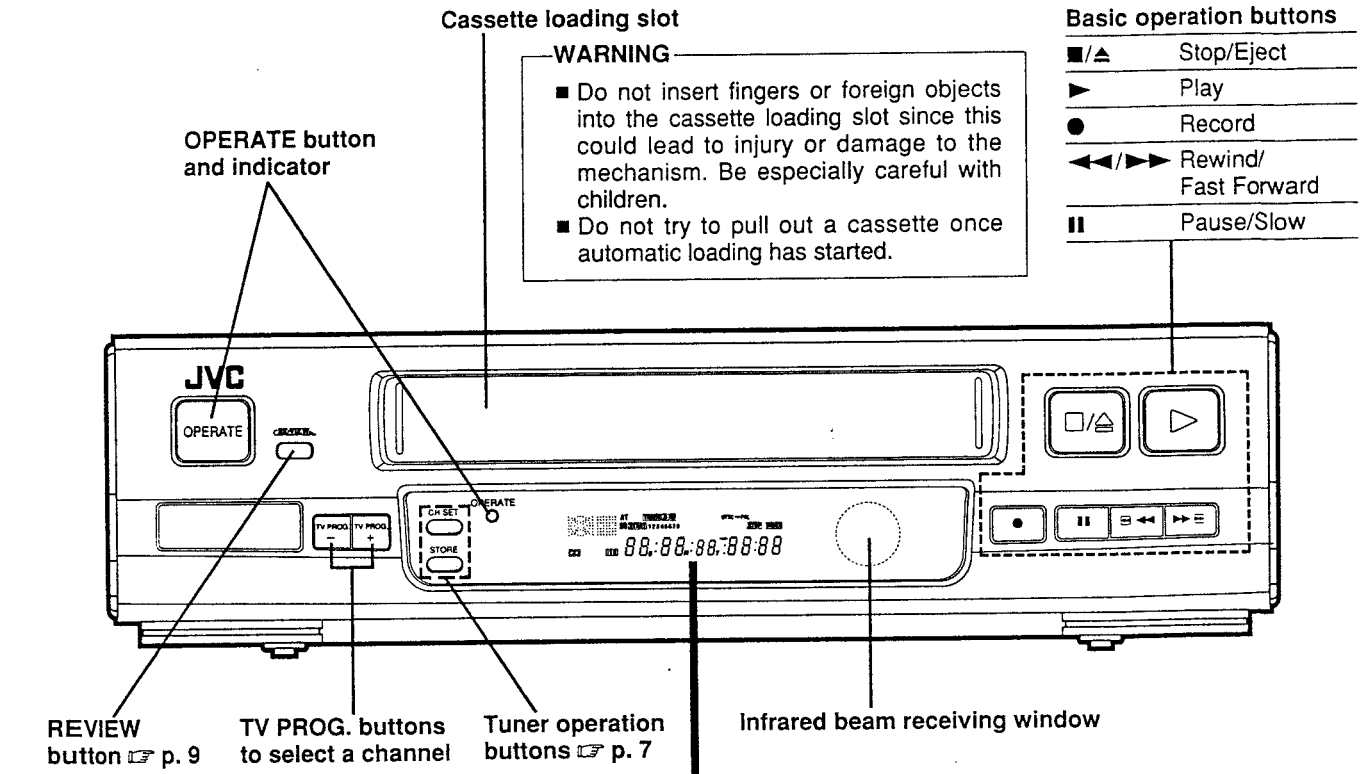
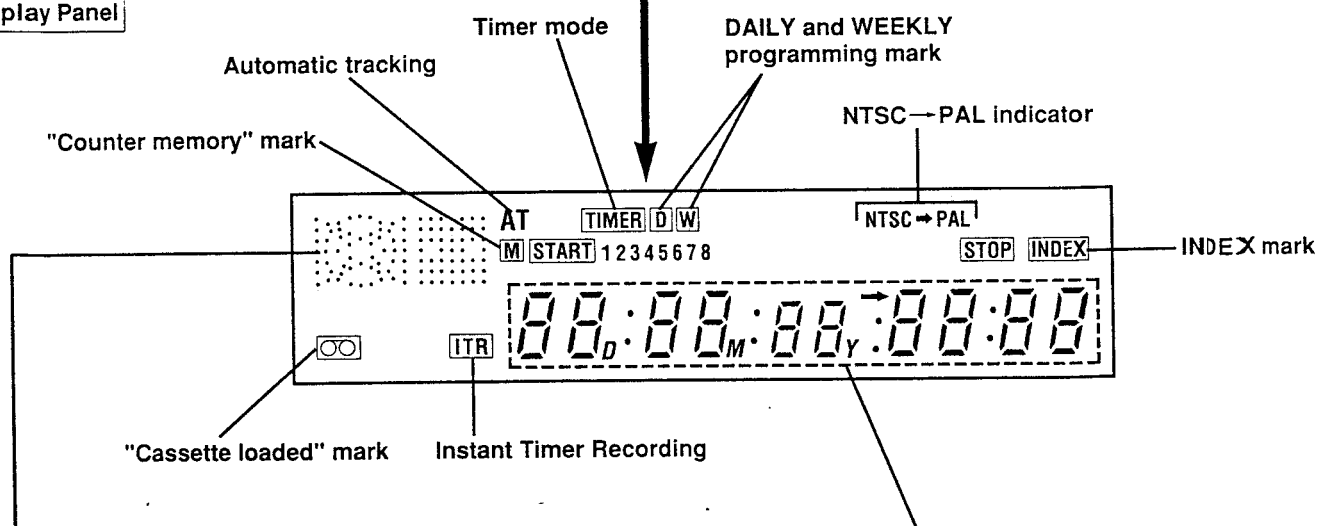
Controls And Indicators

Front Panel


Cassette loading slot
WARNING
■ Do not insert fingers or foreign objects into the cassette loading slot since this could lead to injury or damage to the mechanism. Be especially careful with children.
■ Do not try to pull out a cassette once automatic loading has started.
Basic operation buttons
■/⏏ Stop/Eject
► Play
● Record
◄◄/►► Rewind/ Fast Forward
II Pause/Slow
OPERATE button and indicator
JVC
OPERATE
REVIEW button ☞ p. 9
TV PROG. buttons to select a channel
Tuner operation buttons ☞ p. 7
Infrared beam receiving window

Display Panel



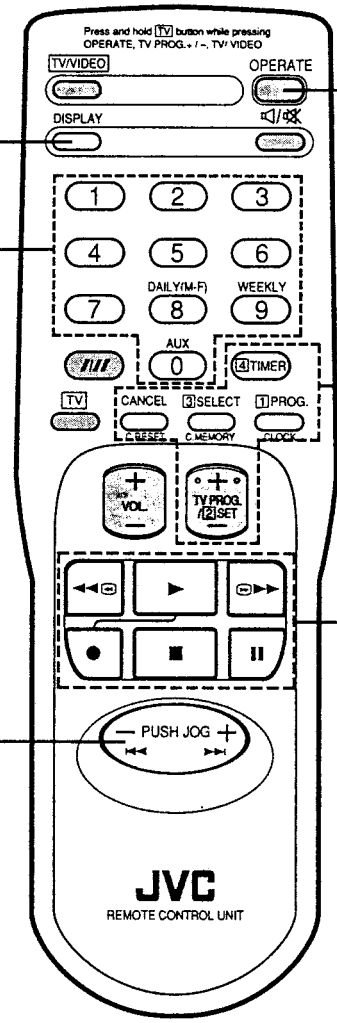
Symbolic mode indicators

PLAY:	▷	REW VARIABLE SHUTTLE SEARCH:	◁
FF:	⋙	STILL: FORWARD SLOW:	▷
REW:	⋘	STILL: REVERSE SLOW:	◁
FF VARIABLE SHUTTLE SEARCH:	▷ ⋙	RECORD :	○
REVERSE PLAY:	◁	RECORD PAUSE:	○

Switchable display
- Channel position
- Date/Clock
- AUX indicator(AU)
- Child lock indicator
- Timer start/stop time
- Instant timer recording time
- Real channel
- Realtime tape counter
- INDEX code number

Controls And Indicators (cont'd)

Wireless Remote Control



DISPLAY button ☞ p.11

Multi-Purpose Numeric Keys

OPERATE button

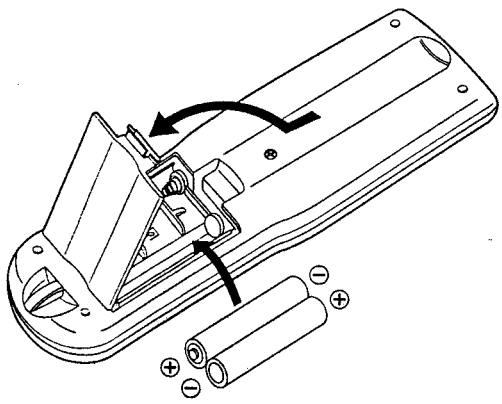
Timer, Tuner, Clock Adjust and Counter operation

Basic Operation buttons

►	Play
◄◄	Rewind
►►	Fast Foward
●	Record
■	Stop
II	Pause/Slow

PUSH JOG button ☞ p. 8, 9

Buttons shown in gray ( ) can also be used to operate a JVC television.



Installing Batteries

1. Open the battery compartment cover.
2. Insert 2 "R03"-size batteries (provided) in the correct directions.
3. Replace the cover.

How To Use

The remote control can operate most of your video recorder's functions, as well as basic functions of designated JVC TV sets.

- Point the remote control toward the sensor window.
- The maximum operating distance of the remote control is about 8 m.

TV Operation

You can also use the recorder's remote control to operate a JVC television.

To operate your TV, press and hold down the TV button while you press OPERATE, or TV PROG. +/−, or TV/VIDEO, or VOL. +/−, or /// (to select either Main or Sub programmes), or (to mute the TV's sound).

- TV channel cannot be changed using the numeric keys.

Connections

It's essential that your video recorder be properly connected. Follow these steps carefully. THESE STEPS MUST BE COMPLETED BEFORE ANY VIDEO OPERATION CAN BE PERFORMED.

A RECORDER-TO-TV CONNECTION

RF CONNECTION

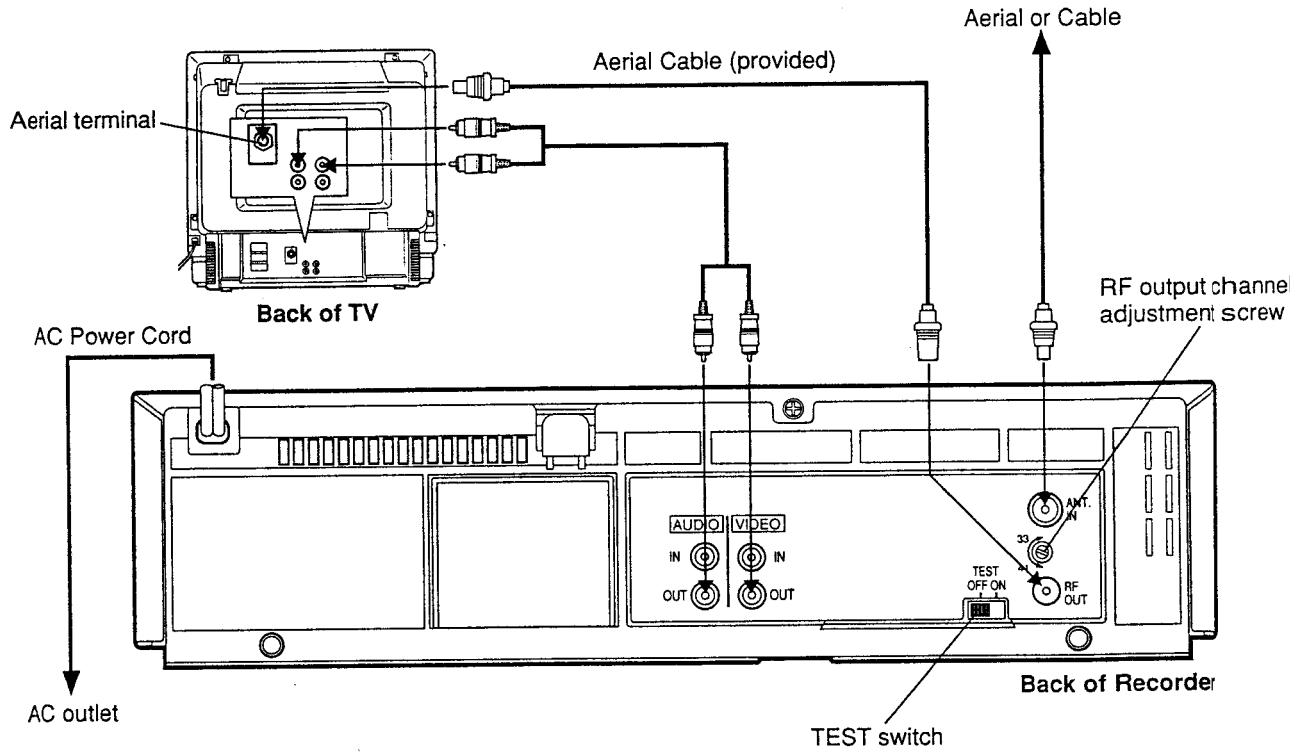
For TV sets without AV input terminals:

1. Connect the TV aerial cable to the recorder.
2. Connect the recorder to the TV's aerial terminal.

AV CONNECTION

For TV sets with AV input terminals:

1. Connect the aerial, recorder and TV as per "RF CONNECTION".
2. Connect the recorder to the TV's AV-IN terminals.

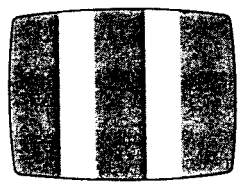


B TUNE THE TV TO YOUR VIDEO RECORDER

The video recorder sends picture and sound signals via the RF connecting cable to your TV on UHF channel 37.

TEST SIGNAL

1. Turn on the recorder.
2. Set the TEST switch to ON.
3. Set your TV to the video channel. Tune the TV to bring the two vertical white bars on the screen most clearly. (UHF/CH 37)



   - Your TV should be set to the channel designated for use with a video recorder or to a spare channel if there is not a specified video channel on your TV.
4. Reset the TEST switch to OFF.

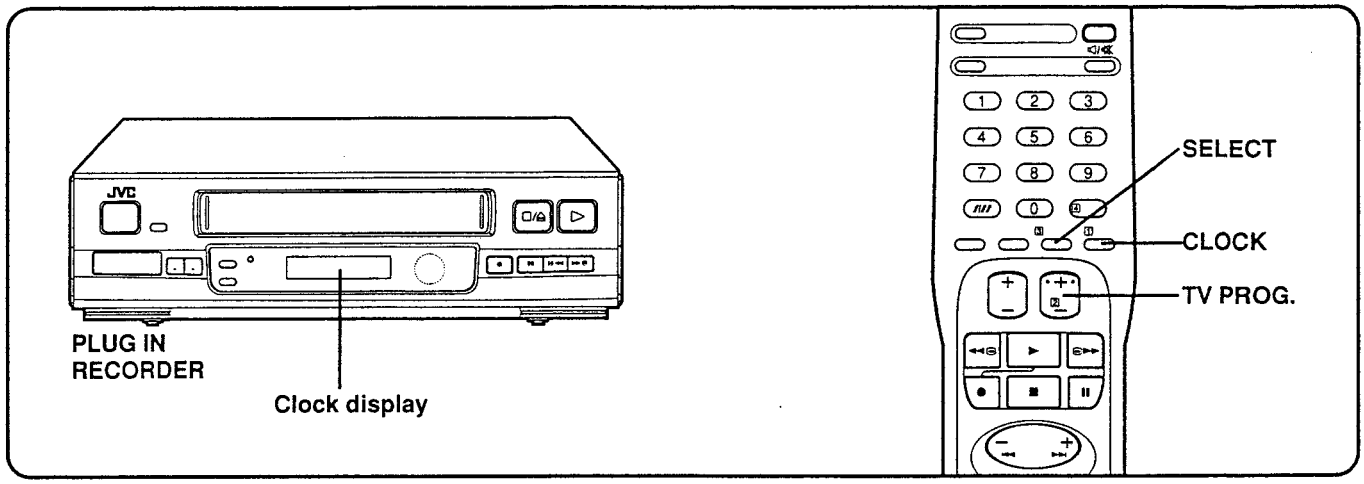
NOTES:

- If CH37 is occupied by a local station, adjust the RF output channel adjustment screw to use another channel between CH33 and CH41 instead.
- If some interference noise is continually seen on the screen, consult your JVC dealer.

IMPORTANT:

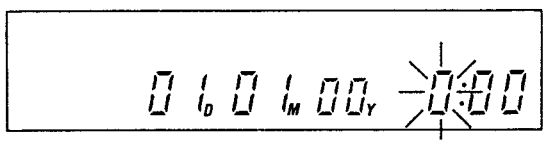
To operate the recorder with your TV using the RF connection, it is always necessary to set your TV's channel to the VIDEO channel. With an AV connection, set the TV to the VIDEO (or AV) mode.

Setting The Clock

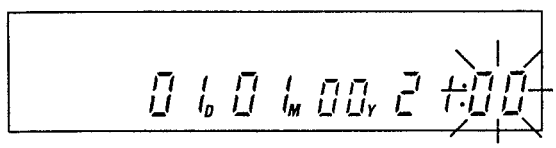


Since your video recorder bases all of its timer recording start and stop "decisions" on the time kept by its built-in clock, accurate setting of this clock is crucial for proper timer-recording results.

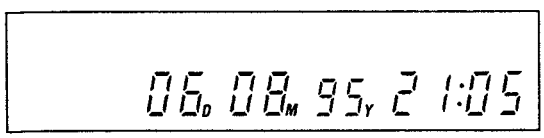
1. **Press CLOCK.**



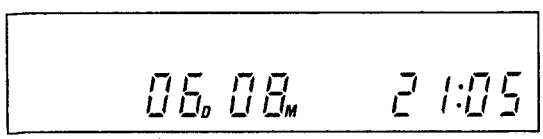
2. **Press TV PROG. to set the hour, and then SELECT.**



3. **Repeat step 2 to set the minute, day , month and year.**



4. **Press CLOCK.**



TO MAKE CORRECTIONS

Advance with SELECT to the item you wish to change and input new data with TV PROG.

POWER FAILURE INDICATOR

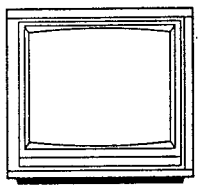
The clock resets to "0:00" and starts blinking when there has been a power failure. Reset the time to return the clock display to normal.

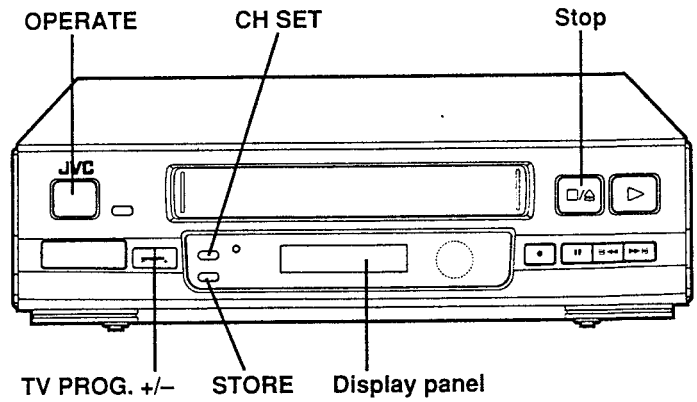
NOTE:

- If the day and month data is invalid (such as 31st April), the month digits are cleared automatically and the day digits will blink. Input again.

Setting The Tuner

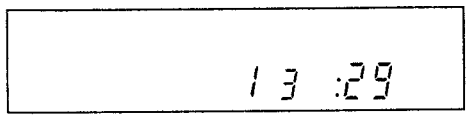
Turn on the TV:
Select VIDEO channel
(or AV mode).



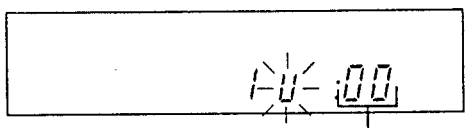


The procedure introduced here lets you assign receivable channels in your area to channel positions on your video recorder's tuner. Once stored, these can be accessed with the TV PROG. buttons.

1. **Press OPERATE to turn on the recorder.**
2. **Keep CH SET pressed until the display panel shows the following.**

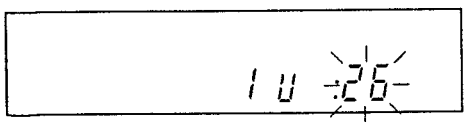


3. **Press CH SET.**
   - The band indicator will blink.
4. **Press TV PROG. +/– to select "1", "3", or "U".**
   "1", "3" : VHF band "U" : UHF band

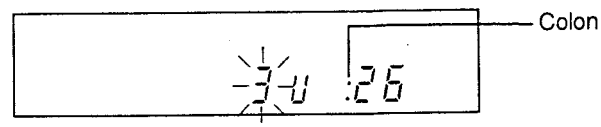


Tuning voltage giving a rough reference of where tuning is being performed in the corresponding band.

5. **Press CH SET.**
   - The tuning voltage indicator will blink.
6. **Keep TV PROG. + pressed for a few seconds until automatic scanning starts.**



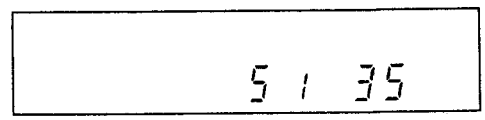
   - When a broadcast is detected, automatic scanning stops.
   - If you don't want to store the detected TV station, repeat step 6 for another station.
7. **Press CH SET.**
8. **Press TV PROG. +/– to select the tuner channel position where you wish to store that TV station.**



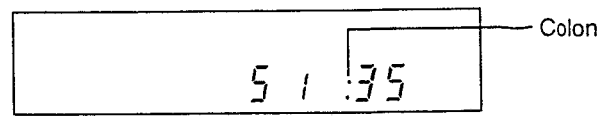
9. **Press STORE.**
   - The TV station will be stored and the colon will disappear.
10. **Repeat steps 4 through 9 for other receivable TV stations.**
11. **Press Stop to disengage the channel set mode.**

TO DELETE STORED CHANNELS

1. Press TV PROG. +/– to select the channel position you want to skip.
2. Press CH SET until the display panel shows the following.

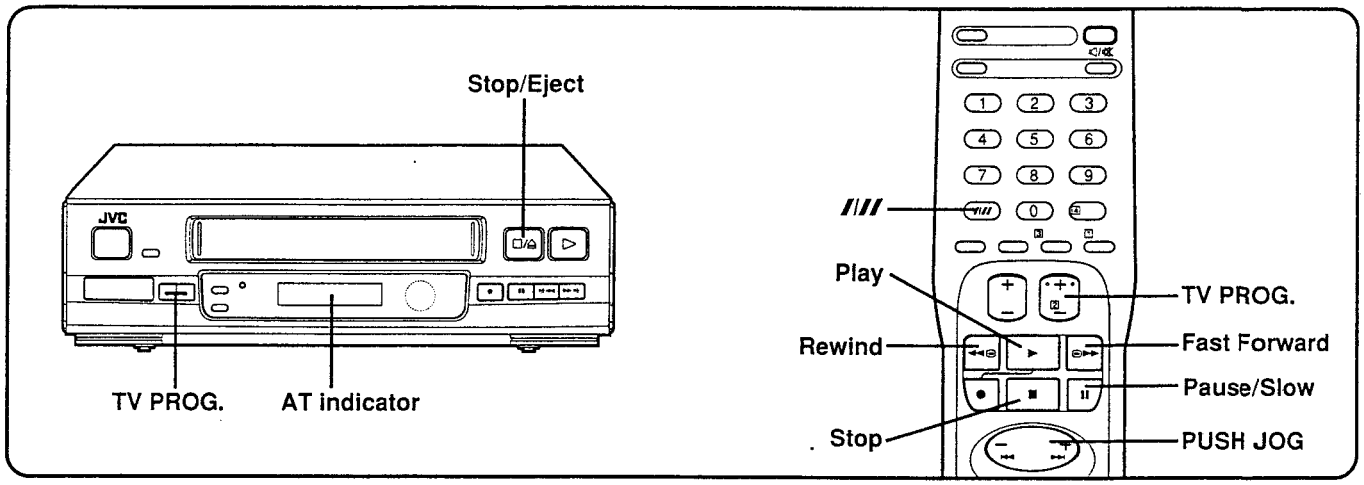


3. Press CANCEL on the remote control unit.



   - The colon will appear and channel position 5 can no longer be chosen by the TV PROG. buttons.
4. Press Stop to disengage the Channel Set mode.

Playback



Basic Operations

Preparation

- Turn on the TV.
- Select VIDEO channel (or AV mode).

1. **Load a cassette.**
   - The recorder power will come on automatically.
   - The counter will be reset to "0:00:00" automatically.
   - If the safety tab on the cassette is removed, playback will start automatically.
2. **Press Play to start playback.**
3. **Press Stop to stop playback.**
   - To rewind the tape, press Rewind.
   - To fast-forward the tape, press Fast Forward.
   - To stop rewind or fast-forward, press Stop.
4. **Press Stop/Eject on the recorder to eject the tape.**

Variable-Speed/High-Speed Search, Still Playback/Frame Advance/Slow Motion

During Playback:

- Press PUSH JOG ⏮ or ⏭ for variable-speed search.
- The more times the button is pressed, the faster the playback picture will move.
- To decrease speed, press the button for the opposite direction.
- Press Fast Forward for high-speed forward search, or Rewind for high-speed reverse search.
- For short searches, keep Fast Forward or Rewind pressed for more than 2 seconds. When released, normal playback will continue.
- Press Pause/Slow to view a still picture.
- Press again to advance the picture frame by frame.
- Press Pause/Slow for 2 seconds for slow motion.

During Still:

- For frame-by-frame playback in the forward or reverse direction, press PUSH JOG ⏮ or ⏭ in the corresponding direction.

Other Functions

Manual Tracking

Your video recorder is equipped with automatic tracking control. If you wish to adjust tracking manually, you can override this function.

During Playback:

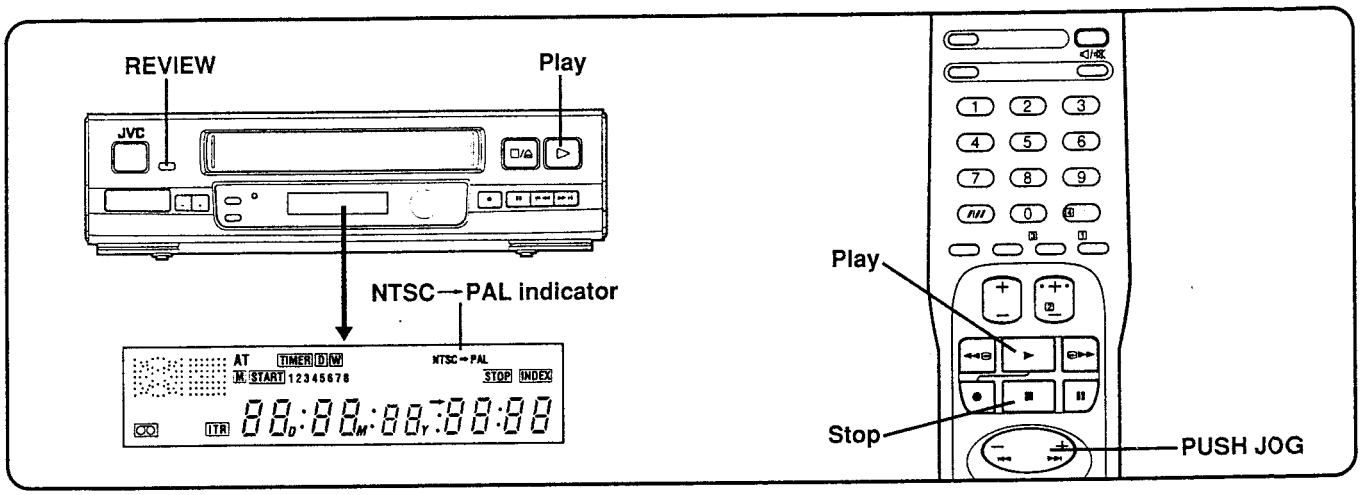
1. Press the recorder's TV PROG. + and – buttons simultaneously.
   - The AT indicator will go out.
2. Press TV PROG. + or – to adjust tracking.
   - Press TV PROG. + and – simultaneously to return to automatic tracking.
   - To adjust tracking manually with the remote control, first press the /// button and then press TV PROG. – or +. Press the /// button again to return to automatic tracking.

During Slow:

1. Simply press TV PROG. + or – to adjust tracking.

NOTES:

- The recorder automatically stops when still continues for more than 5 minutes.
- If the still picture is unstable, use the TV PROG. buttons to correct the picture.
- During search playback, some noise bars will appear.
- There is no audio during search, slow, still, or frame-by-frame playback.
- When a new tape is inserted, the recorder enters the automatic tracking mode automatically.

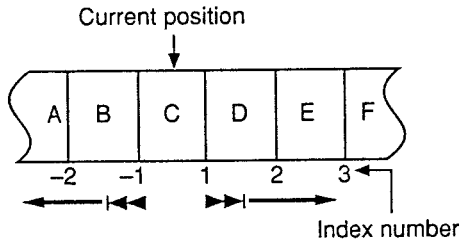


Index Search

Your recorder automatically marks index codes at the beginning of each recording. This function gives you quick access to any one of 9 index codes in either direction.

During Stop:

1. Press PUSH JOG ⏮ or ⏭. "INDEX –1" or "INDEX 1" will be displayed on the display panel and search will begin in the corresponding direction.
2. If you wish to access index codes 2 through 9, press PUSH JOG repeatedly until the correct index number is displayed.
   Ex.: To locate the beginning of B from the current position, press PUSH JOG ⏮ twice.
   To locate the beginning of D from the current position, press PUSH JOG ⏭ once.



- When the specified index code is found, playback will start automatically

ReView Function

Simply by pressing a single button, the recorder power comes on, rewinds, and begins playback of the last recording. This makes it easier to "review" the programme you have timer-recorded.

When the recorder power is off:

Press REVIEW.

- After the recorder power comes on, the tape will be rewound to the beginning of the last recording (where the index code is placed) and playback will start automatically.
- To play back a recording located 2 index codes away, press REVIEW twice. You can access any one of up to 9 index codes.
- ReView is not possible while the recorder is in the Timer mode.
- The recorder's REVIEW button lights when timer-recording is finished, and blinks while the tape is being rewond.

NTSC Playback

Your video recorder is equipped with NTSC circuitry that can play back NTSC tapes.

1. Insert a cassette recorded in NTSC.
2. Press Play.

When playing back NTSC tapes:

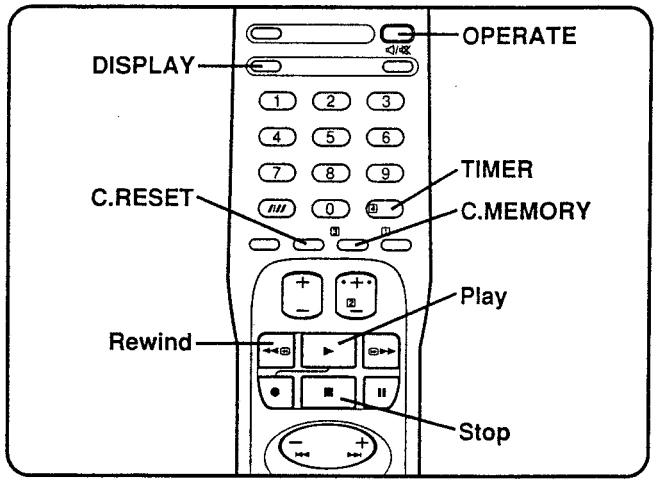
- "NTSC → PAL" will appear on the display panel.
- Some TVs shrink the picture vertically and place black bars at the top and bottom of the screen. This is not a malfunction on the part of either the video recorder or the TV.
- The picture may roll up or down. This can be corrected using the V-HOLD control found on some TVs. (This cannot be corrected if the TV does not have a V-HOLD control.)
- The counter reading will be incorrect.
- During search, still, or frame-by-frame playback, the picture will be distorted, and there may be a loss of colour.

Repeat Playback

During Playback:

1. Press Play for more than 5 seconds, and release.
   - The Play indicator (▷) on the display panel will blink slowly.
   - The tape will be played all the way to the end 20 times automatically, and then stop.
2. To stop playback at any time, press Stop.

Playback (cont'd)



Other Functions (cont'd)

Counter Memory

During Playback:

1. Press DISPLAY until a counter reading appears on the display panel.
2. Press C.RESET at a point you wish to locate later.
   - The counter will read "0:00:00".
3. Press C.MEMORY.
   - The M indicator will light on the display panel.
4. When you wish to return to that point, press Stop and then Rewind.
   - The tape will rewind and stop at about "0:00:00" automatically.
5. To cancel the Counter Memory mode, press C.MEMORY again.

Next Function Memory

Your recorder can memorise what to do after rewind.

During Stop:

For automatic start of playback after the tape is rewound:

1. Press Rewind.
2. Press Play within 2 seconds.

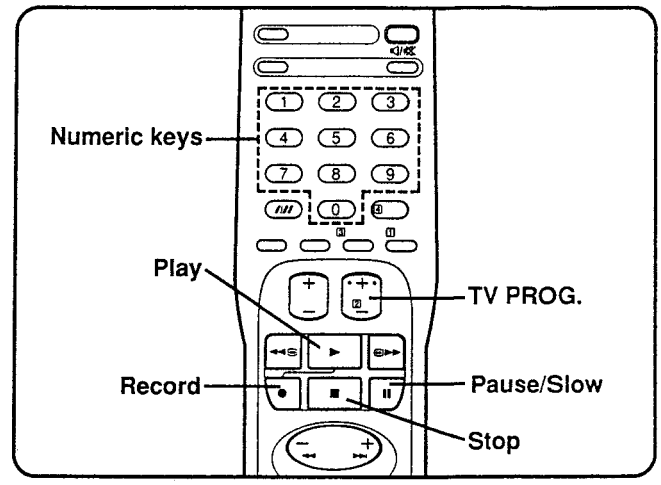
For automatic power off after the tape is rewound:

1. Press Rewind.
2. Press OPERATE within 2 seconds.

For automatic timer standby after the tape is rewound:

1. Press Rewind.
2. Press TIMER within 2 seconds.

Recording



Basic Operations

Preparation

- Turn on the TV.
- Select VIDEO channel (or AV mode).

***1.* Load a cassette.**
- The recorder power will come on automatically.

***2.* Press TV PROG. or the numeric keys to select the channel you wish to record.**

***3.* Press Record and Play simultaneously.**

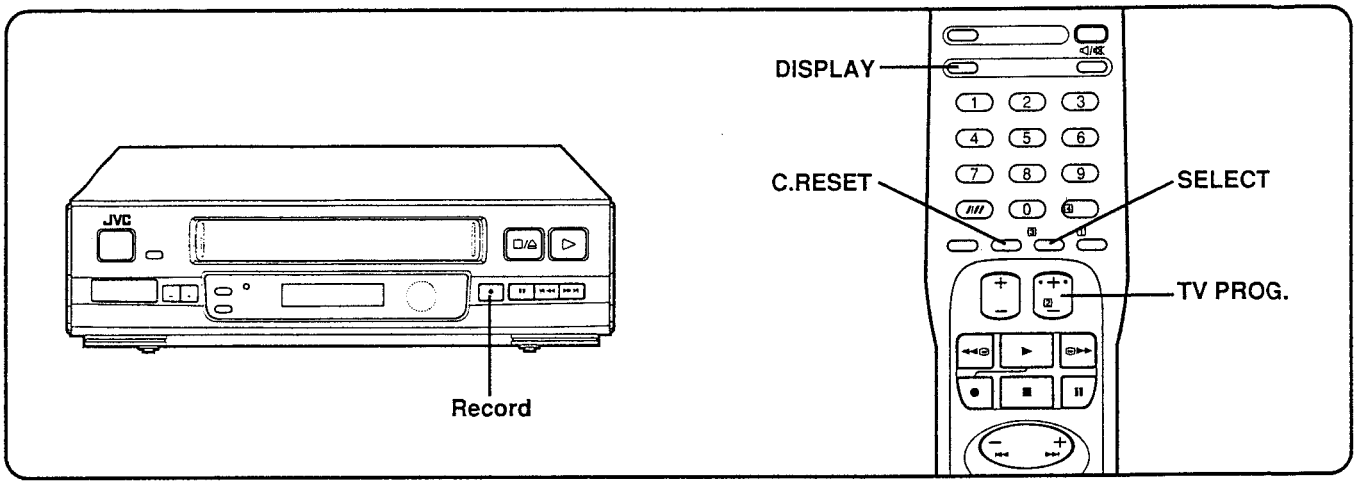
***4.* Press Pause/Slow to pause recording.**

***5.* Press Play to resume recording.**

***6.* Press Stop to stop recording.**

NOTES:

- To start recording with the recorder's Record button, press it once on its own.
- After pause, when recording is resumed, a few frames recorded before the pause may be overlapped by the new recording. This is meant to reduce picture distortion and is not a malfunction.
- The recorder automatically stops when record-pause continues for more than 5 minutes.
- If the Record button does not work, check to see if the cassette's safety tab has been removed.
- The channel cannot be changed while recording is in progress. To change the channel, engage the record-pause mode, then change the channel.
- The recorder automatically rewinds when the end of the tape is reached during recording.



Other Functions

To Watch Another Programme While Recording

During Record:

1. Use the channel controls on the TV to select the other channel you wish to view.
   - The programme selected with the TV channel controls will appear on the TV screen while the one selected with the video recorder's channel controls will be recorded on the tape.

Instant Timer Recording (Off Timer)

You can start a recording and then set the recorder to shut off automatically after a set duration.

During Record:

1. Press recorder's Record. "ITR" and "0:30" indications appear, advising that power will switch off after 30 minutes.
2. Press Record again to delay the off-time by 30-minute increments (up to 4 hours).
   - For more precise setting, use the remote control's SELECT and TV PROG. buttons to set the exact time required (possible up to 4 hours and 59 minutes).

Elapsed Recording Time Indication

When you need to know the exact time of a recording.

1. Press DISPLAY until a counter reading appears on the display panel.
2. Press C.RESET before starting recording or playback.
   - The counter will be reset to "0:00:00" and show the exact elapsed time as the tape runs.

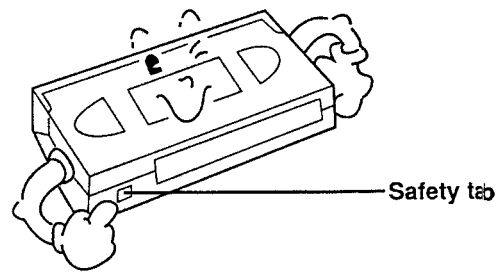
Display Button

When you wish to check the time, date, or counter reading

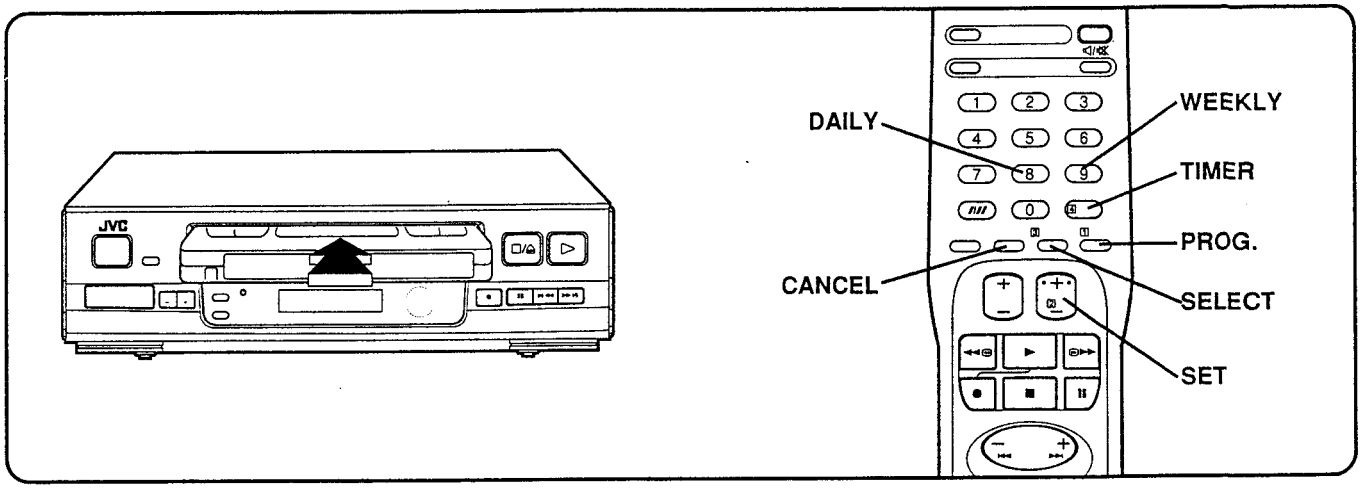
1. Press DISPLAY to display the current clock time.
2. Press DISPLAY again to display the current date.
3. Press DISPLAY again to display the counter reading.

Special Note On Video Cassettes

To prevent accidental recording on a recorded cassette, remove its safety tab. To record on it later, cover the hole with adhesive tape.



Timer-Recording



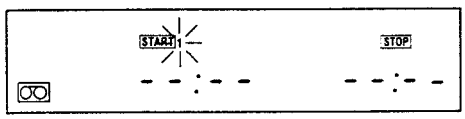
Timer programming can be done while referring to the recorder's display panel. Make sure that the display panel shows the correct current time.

Preparation

Insert a cassette with the safety tab in place.

■ The recorder power will come on automatically.

1. **Press PROG. until the display panel shows the following.**

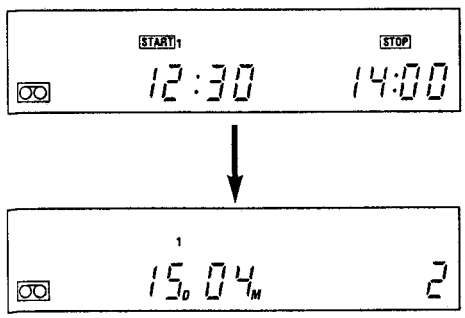


Recorder's Display Panel

■ You are ready to input data into Program No. 1.

■ To change the program number, press PROG.

2. **Press SELECT.**
3. **Press SET to set the start hour and then SELECT.**
4. **Repeat step 3 to set the minute and stop time, day, month and channel.**

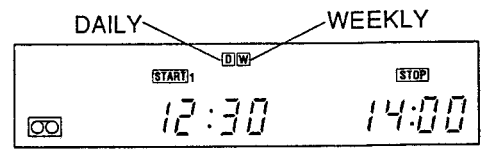


■ The current program number will blink.

■ If you need to set another program, repeat steps 1 through 4.

WEEKLY program : During steps 1 through 4, press numeric key "9" on the remote control.

DAILY (Mon. – Fri.) : During steps 1 through 4, press numeric key "8" on the remote control.



5. **Press TIMER.**

■ The recorder will enter the Timer mode and power will go off.

TO MAKE CORRECTIONS

1. Press SELECT to make the item you want to change blink.
2. Press SET to change the data.

TO CHECK AND CANCEL PROGRAMS

To check preset programs:

1. Press PROG. until the program settings are displayed.
   ■ Program 1 is displayed with the number blinking.
2. Press SELECT to review the program contents in succession.
3. To check another program, press PROG. again.

To cancel the program:

4. Press CANCEL.
   ■ You can press CANCEL at any stage while the program is open.

TO USE THE RECORDER AFTER SETTING TO THE TIMER MODE

For safety, your recorder disables all other functions while in the Timer mode.

■ Press TIMER to disengage the Timer mode.

■ To re-engage the Timer mode, press TIMER.

Error Indications

The following error indications may appear on the recorder when you press the TIMER button to engage the Timer Standby mode. Here's why, and what you should do.

■ "TIMER" and "📼" on the display panel continue blinking.
WHY: There is no cassette in the recorder.
WHAT TO DO: Insert a cassette.

■ The cassette is automatically ejected. "TIMER" and "📼" continue blinking.
WHY: The inserted cassette has its safety tab removed.
WHAT TO DO: Insert a cassette with its safety tab intact. Or cover the safety tab hole of the cassette with adhesive tape and re-insert it. ☞ p. 11.

■ "TIMER" blinks for 10 seconds and the Timer Standby mode is cancelled.
WHY: There are no preset programs in memory, or they have all been incorrectly preset.
WHAT TO DO: Check the programmed data and re-program it as necessary. Press TIMER again.

Other Indications

■ "TIMER" steady lit (with clock display).
WHY: The recorder is in the Timer Standby mode. This is the normal display you should see when you press the TIMER button.

■ " ◌ " and "TIMER" steady lit.
WHY: Normal display while timer-recording is in progress.

■ The cassette was ejected, with power off and "TIMER" and "📼" are blinking.
WHY: This means that the end of the tape was reached while timer-recording was in progress. Therefore, the preset program may not be recorded in its entirety.

■ "0:00" blinking.
WHY: This means the clock must be set. It's displayed when time-keeping is terminated due to a power failure or because the recorder's power plug was pulled from the AC outlet.
WHAT TO DO: Set the clock. ☞ p. 6.
■ If power was interrupted, it's also likely that all preset timer programming data has been erased. Please check and re-program as necessary.

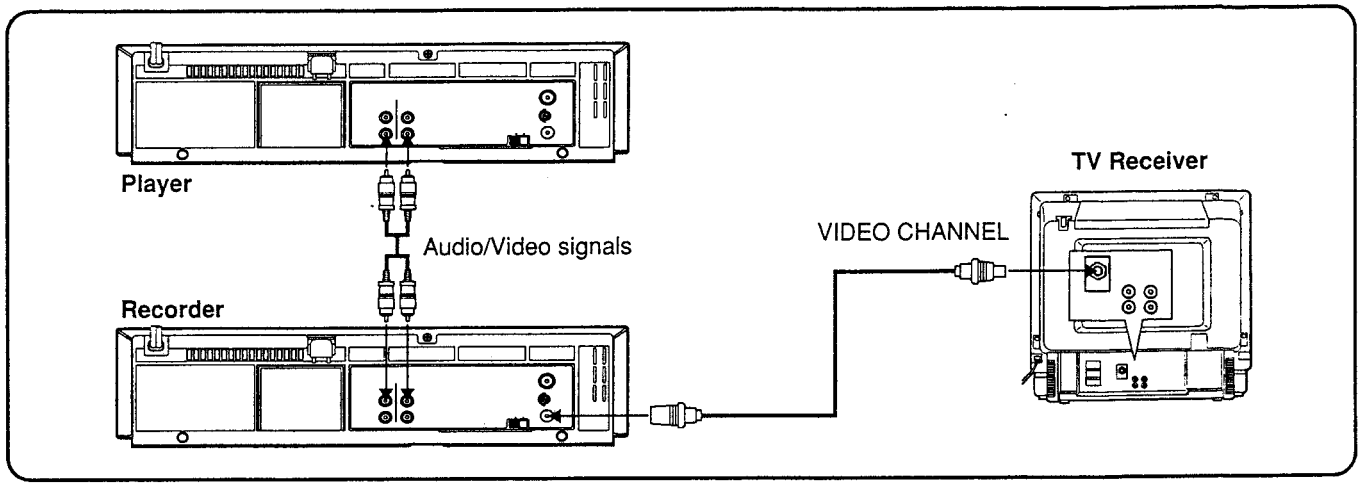
Locking The Recorder's Controls

To avoid unwanted operation and prevent accidental recording...
1. Press the remote control's OPERATE button to turn the recorder's power off. Keep this button pressed for about 2 more seconds after the power LED indicator has gone off.
   ■ The Child Lock indicator (–) will appear on the display panel.
2. Child Lock is cancelled when you switch the recorder's power on with the remote's OPERATE button.
   ■ Pressing the TIMER button during timer-recording also cancels the Child Lock mode.

NOTES:

■ While Child Lock is engaged, make sure you keep your remote control in a safe place inaccessible to children.
■ Timer-recording is possible in the Child Lock mode. After timer-recording is done, Child Lock remains in effect.

Editing

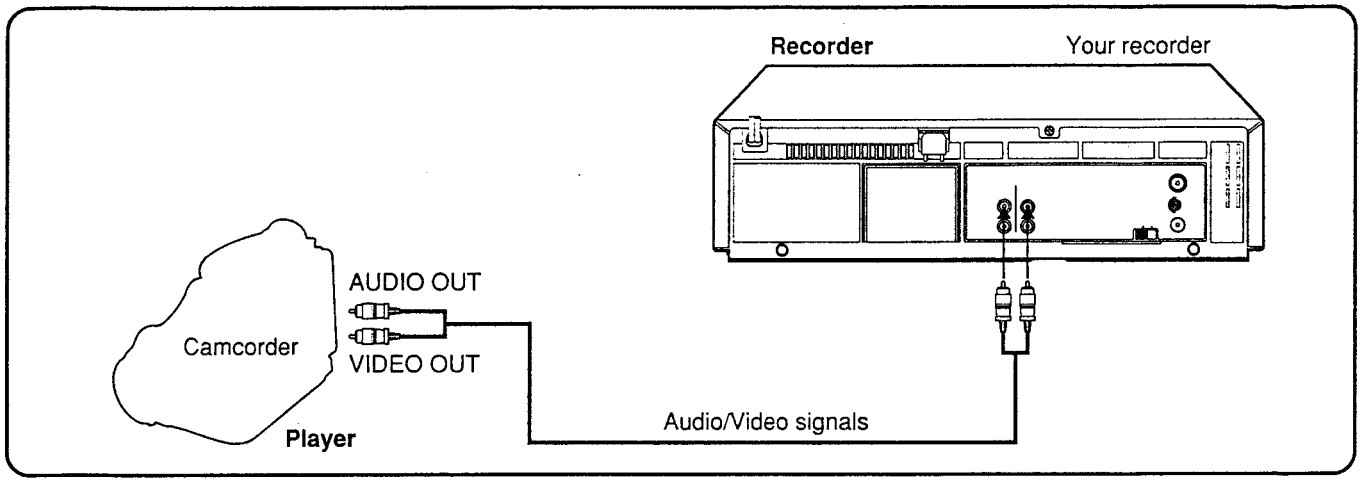


Editing To/From Another Recorder

Preparation

■ Connect the player's AUDIO and VIDEO OUT connectors to the recorder's AUDIO and VIDEO IN connectors.

	Player	Recorder
1	Load the source tape.	Load the recording tape.
2		Select the external input mode. **With this video recorder,** Press the numeric key "0". "AU" will appear instead of a channel number.
3		Press and hold down the Pause button while you press the Record button to enter the Record-Pause mode.
4	Play back the source tape to search for a scene to be edited.	
5		Start recording where you want to start editing, with this recorder, by pressing the Play button.
6		To stop editing temporarily, press the Pause button.
	Repeat steps 4 through 6 to continue editing.	
7	To stop editing, press the Stop button.	



Editing From A Camcorder

Preparation

■ Connect the camcorder's A/V output connectors to the recorder's AUDIO and VIDEO IN connectors.

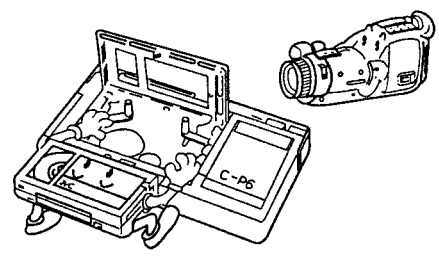
	Camcorder	Recorder
1	Load the source tape.	Load the recording tape.
2		Select the external input mode: Press the numeric key "0". "AU" will appear instead of a channel number.
3		Press and hold down the Pause button while you press the Record button to enter the Record-Pause mode.
4	Play back the source tape to search for a scene to be edited.	
5		Press the Play button where you want to start editing.
6		To stop editing temporarily, press the Pause button.

Repeat steps 4 through 6 to continue editing.

7	To stop editing, press the Stop button.

To Watch A Compact VHS Tape

Compact VHS camcorder recordings can be played on your video recorder. Place the recorded cassette into a C-P6 Cassette Adapter and it can be used like any full-sized VHS cassette.



In Case Of Difficulty

POWER AND TAPE TRANSPORT PROBLEMS

Symptoms	Check points
No power is applied to the recorder.	■ Is the power cord disconnected? — Connect it.
Clock is functioning properly, but the recorder cannot be powered.	■ Is "TIMER" displayed on the display panel? — Press the TIMER button to extinguish the display.
Tape stops during rewind or fast-forward.	■ Is the C. MEMORY button pressed? — Press again to make "M" disappear from the display panel.

RECORDING PROBLEMS

Symptoms	Check points
Recording cannot be started.	■ Is a cassette loaded? ■ Is the safety tab on the cassette removed? — Reseal the slot with adhesive tape.
TV broadcasts cannot be recorded.	■ Has "external input" been selected? — Set to the desired channel.
Tape-to-tape editing or camera recording is not possible.	■ Is the camcorder or another video recorder correctly connected? ■ Are all necessary power switches turned ON? ■ Has "AU" been selected? — Set to "AU". (☞ p. 14, 15)
Timer recording is not possible.	■ Have you set the clock correctly and programmed the timer correctly? — Check once again. ■ Is "TIMER" displayed on the display panel? — If not, press the TIMER button to display "TIMER".

PLAYBACK PROBLEMS

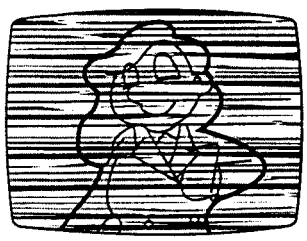
Symptoms	Check points
Playback picture does not appear while the tape is running.	■ If you are using RF OUT connection, is the TV receiver's channel selector set to the correct video channel? — Set it to the RF converter channel (UHF 37). (☞ p. 5) ■ If you are using AV connection, is the TV receiver set to the AV mode? — Set it to the AV mode.
Noise occurs during visual search.	■ This is normal.
Noise occurs during normal or slow-motion playback.	■ Is the automatic tracking mode engaged? — Try manual tracking. (☞ p. 8)
Playback picture is blurred or interrupted while TV broadcasts are clear.	■ Video heads may be dirty. — Head cleaning is necessary. Consult your JVC dealer. (☞ p. 17)

OTHERS

Symptoms	Check points
Whistling or howling is heard from TV during camera recording.	■ Move camcorder or camera's microphone away from TV or reduce TV sound volume.
Channel cannot be switched.	■ Is recording in progress? — Press the Pause/Slow button, change the channel, and press the Play button.
Remote control does not function.	■ Are the batteries discharged? — Replace with new ones.

ATTENTION:
This recorder contains microcomputers. External electronic noise or interference could cause malfunctioning. In such cases, switch the power off and unplug the power cord. Then plug it in again and switch on. Take out the cassette. After checking the cassette, operate the unit as usual.

About Head Cleaning



- If the picture playback becomes blurred, it does not mean that the recorded program has been erased.
- Dirt accumulated on the video heads after long periods of use causes such troubles. In this case, head cleaning requiring highly technical care is necessary.
- For head cleaning, consult the nearest JVC dealer.

Precautions

Please follow these safety precautions. Not doing so may result in damage to the recorder, remote control, or video cassette.

- **Avoid extreme heat and direct sunlight.**
- **Avoid extreme cold.**
- **Avoid extreme humidity.**
- **Avoid dust.**
- **Avoid places subject to vibrations.**
- **Avoid strong magnetic fields.**
- **Do not block the recorder's ventilation openings.**
- **Do not place anything heavy on the recorder or remote control.**
- **Do not place anything which might spill on top of the recorder or remote control.**
- **Do not place the recorder on cushions, pillows, or thick carpeting.**
- **Use the recorder in a stable, horizontal position only.**

Beware of moisture condensation

Moisture in the air will condense on the recorder when you move it from a cold place to a warm place, or under extremely humid conditions — just as water droplets form on the surface of a glass filled with cold liquid. Moisture condensation on the head drum will cause damage to the tape. In conditions where condensation may occur, keep the recorder's power turned on for a few hours to let the moisture dry.

When transporting

- Be sure to remove cassette from recorder before packing.
- Avoid violent shocks to the recorder during packing and transport.

Place cassettes in cassette cases and store vertically.

Specifications

GENERAL

Power requirement	: AC 220 – 240 V~, 50/60 Hz
Power consumption	: 18 W
Temperature	
Operating	: 5°C to 40°C
Storage	: –20°C to 60°C
Dimensions (WxHxD)	: 360 x 94 x 298 mm
Weight	: 3.8 kg
Format	: VHS PAL standard
Maximum recording time	: 240 min. with E-240 video cassette

VIDEO/AUDIO

Signal system	: PAL-type colour signal and CCIR monochrome signal, 625 lines/50 fields
Recording/Playback system	: Rotary two-head helical scan system
Signal-to-noise ratio	: 45 dB
Horizontal resolution	: 250 lines
Frequency range	: 70 Hz to 10,000 Hz
Input/Output	: RCA connectors (IN x 1, OUT x 1)

TUNER/TIMER

TV channel storage capacity	: 48 positions (+AUX position "AU")	
Channel coverage	: AUS	NZ
VHF 44 – 108 MHz	CH 0 – 5	CH 1 – 3
137 – 230 MHz	CH 5A – 12	CH 4 – 11
UHF 470 – 862 MHz	CH 28 – 69	CH 21 – 69
Aerial output	: UHF channel 37 (Adjustable 33 – 41)	
Memory backup time	: Approx. 3 min.	

ACCESSORIES

Provided accessories	: Aerial cable, Infrared remote control unit, "R03" battery x 2

Design and specifications subject to change without notice.